

# Biological Safety Cabinet EN12469 Certified

BSC-1003IIA2/1303IIA2/1603IIA2

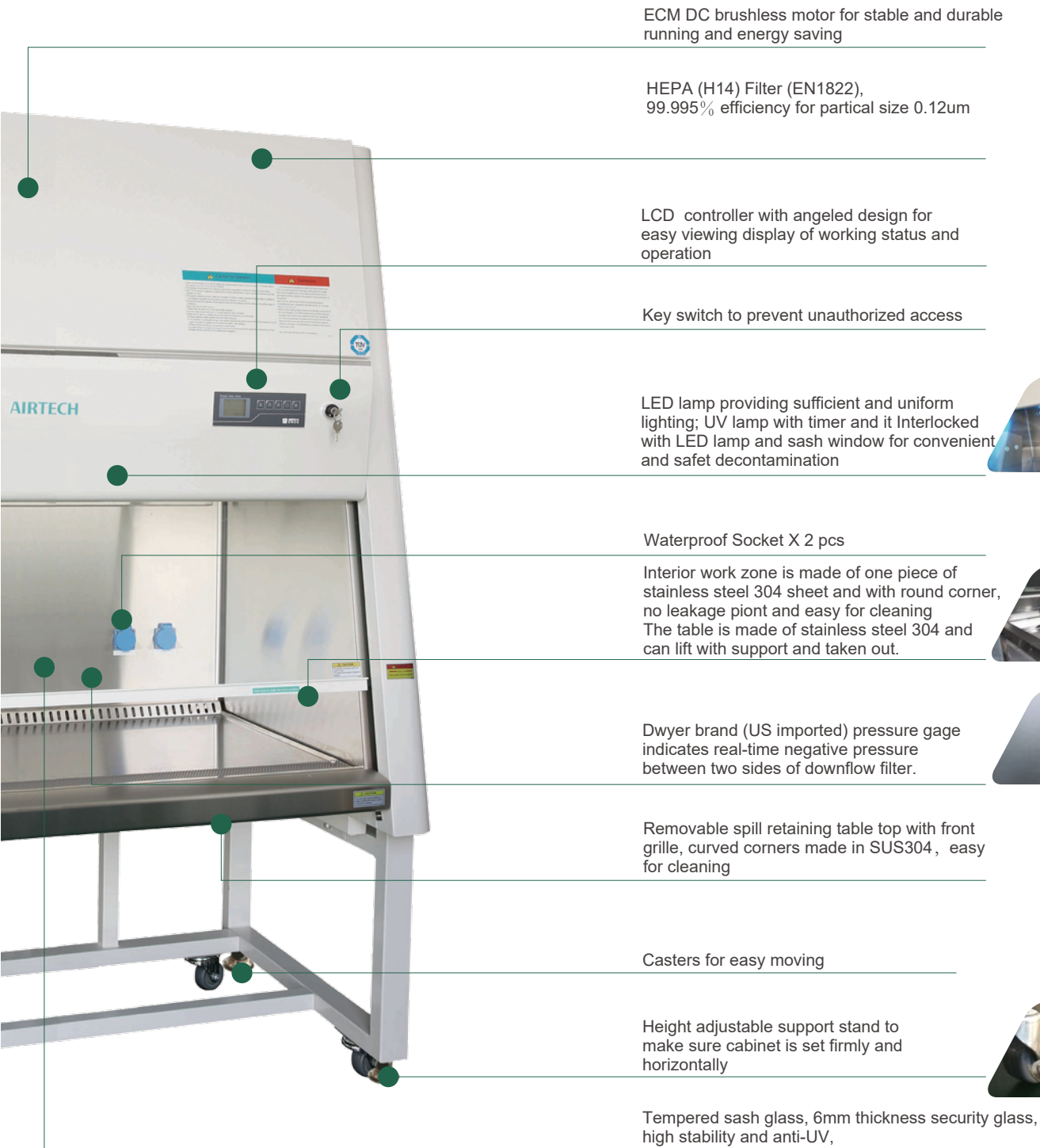


Airtech Biological safety cabinet Class IIA2 airflow ratio is 70% recirculation and 30% exhaust, providing the protection to person, samples and environment from biological hazards and contamination.

It equips with DC ECM motor for 60% energy saving, HEPA (H14) filter efficiency 99.995% @ 0.3 micron which conforms EU standard EN1822 and Japan velocity sensor for accurate control and display accuracy at 0.001m/s. The performance meets the standard EN12469.



EN 12469



International Standards				
Standards Compliance	Biosafety Cabinets	Air Quality	Filtration	Electrical Safety
	Designed to meet: EN12469,Europe	ISO 14644.1, Class 5, Worldwide JIS B9920, Class 5, Japan JIS BS5295, Class 5, Japan US Fed Std 209E, Class 10 USA	ISO29463, Worldwide EN-1822, Europe EN13091, Europe IEST-RP-CC034.1, USA	EN-61010-1, Europe IEC61010-1, Worldwide



## Reliable ECM DC brushless motor

## Intelligent CAV technology( Constant Air Volume) and CPAS (Constant Pressure Apheresis System ) technology

The biological safety cabinet adopts the USA Genteq brand ECM DC brushless motor working with the CPAS and CAV technology providing a safe and reliable airflow volume and pressure during the operation in BSC. Based on the ECM feature that can determine supply air volume and pressure by detecting changes in internal current and power, and realize automatic regulation on the balance of air volume or pressure. The CPAS and CAV technologies are to precisely control airflow. When the cabinet is operated at set velocities and without readjusting the fan speed control, a 50% increase in pressure drop across the filter doesn't decrease total air delivery more than 10%.



Besides, the ECM DC motor can save up to 60% energy compared with traditional AC motor.

## Integrated Filtration System

USA H&V brand HEPA Filter medium are applied in the supply HEPA (H14) filter and exhaust HEPA filter guarantee the filtration efficiency  $\geq 99.995\%$  for 0.3micron particles (Europe EN1822 standard) providing strong filtration capability. The 2 HEPA filters are designed with the leakage resistance patent technology, ensuring the work area air cleanliness at Class 5 (ISO14644.1 standard) . Therefore, it can ensure the operated samples and operator in clean environment.



## Work area is surrounded by Negative pressure

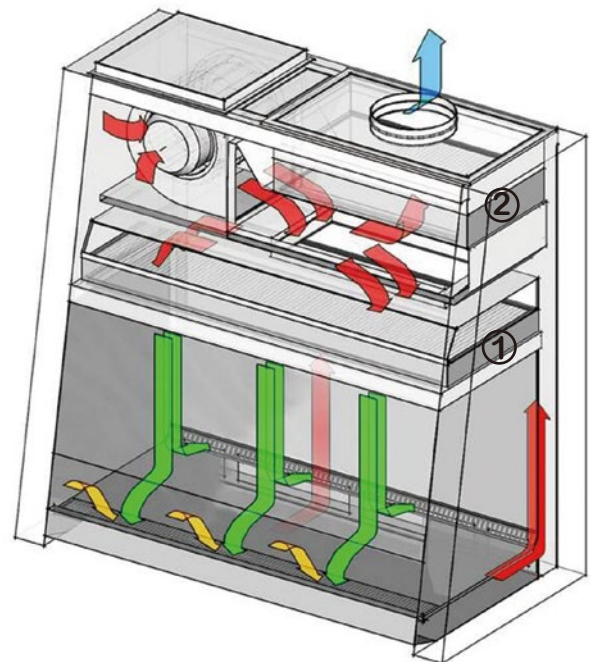
The work area is made by one piece of SUS304 plate without weld point, it supports the precisely controlled airflow forms to the biologically contaminated ducts and plenums under negative pressure or surrounded by negative pressure ducts and plenums. it reduce the contaminated air in work area to leakage to room and protects the operator in safety.

Filtered air exhaust to room or outside. Approximately 30% of the air in the common plenum is exhausted through the HEPA filter to the room. The contaminated air filtrated by HEPA filter and becomes clean air into the room. Japan Airflow sensors have a known standard of deviation exceeding safe airflow requirements by biological safety cabinets.

Approx. 30% air exhausted  
Approx. 70% recirculated through downflow  
Inflow air creates a air barrier to protects the  
Inside air leakage to room and room air entry in  
Work zone.

- ① Downflow HEPA filter
- ② Exhaust HEPA filter

- Room air
- HEPA filter downflow air
- Contaminated air
- HEPA filter exhaust air



## Intelligent control system

The controller is with password protection, the unauthorized person can not adjust the operating parameters.

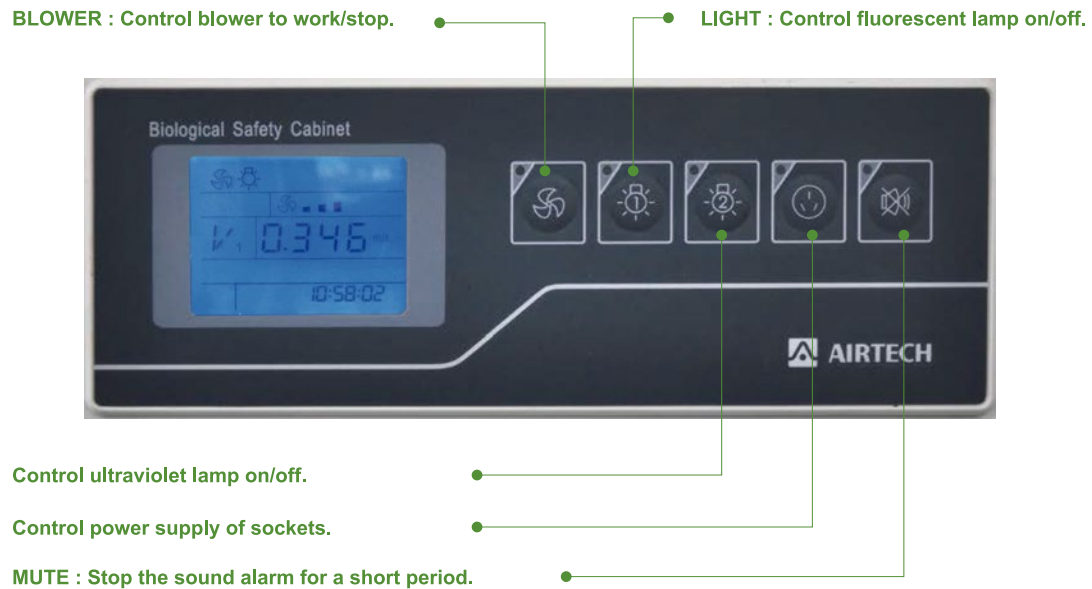
### Control buttons and button indicators :

1) Blower 2) LED light 3) UV light 4) Socket power 5) Mute, when the button works, the indicator is on.

### Angled LCD display is easy to read the BSC working status.

- ▶ Display blower, LED light, UV light and socket works condition
- ▶ Display downflow velocity and inflow velocity, the velocity display accuracy is 0.001m/s, This is based on independent sets of velocity sensors made in Japan.
- ▶ Display time, it is easy to know the operation time
- ▶ Display UV timer





## Alarm system:

- 1) Abnormal velocity alarm: Inflow velocity alarm and Downflow velocity alarm
- 2) Sash window height alarm
- 3) Filter high resistance alarm
- 4) Blower failure alarm

## Inquiry system

User can inquiry ECM DC motor service time and UV service time under engineer's permission

## UV light and UV timer

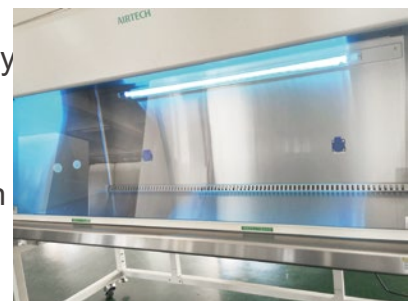
254nm UV germicidal light for decontamination.

UV light, light and sliding sash are interlocked, UV light can only be turned on when light is off and anti-UV sliding sash is fully closed. It protects the operator in safe.

UV light timer function is programmable. UV light works time can be set according the enhances contamination control, extends UV lamp life and saves energy.

1) UV light turning off delay setting: UV light will be off automatically the UV light off time is 30 minutes.

2) UV light turning on time and turning off time setting. UV light can be on and be off automatically and programed as per actual time, adjustment is 1 second.

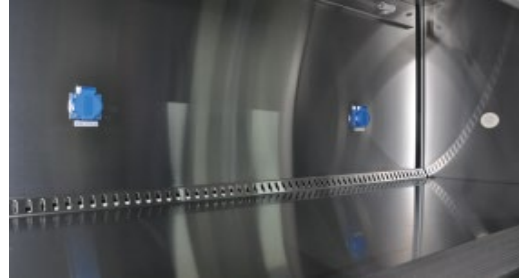


## Excellent Designed parts

► Front sash window adopts hanging lifting system (Imported from Japan) , using spring to limit the sash glass height level at arbitrary positioning, and avoid sash glass drop down suddenly.

Front sash glass thickness is 6mm, high stability and convenient to sterilization when it closed.

► The interior work zone is made of one piece of SUS304 plate with round corner, no weld point, no leakage risk and easy for cleaning. The work zone is surrounded by negative pressure, ensuring the contaminated air not leak outside.

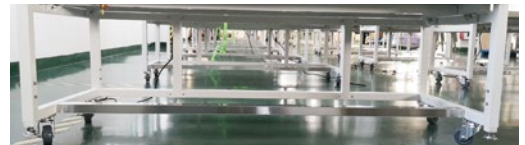


► Work table is made of SUS304 plate and can be took out from work zone. It can be risen up by handle and support rod, convenient for clean the area below working table and collecting tank.

► 4 liter SUS collecting tank with drainage valve, easy to collect water, cleaning and disinfection liquid.

The exterior is made of steel with sprayed powder, anti-bacteria and easy for cleaning.

► The base stand is equipped with mobile castors and leveling feet. The base stand height is adjustable and leveling foot is without exposure thread. It is convenient for user to adjust the height of BSC and easy to fix BSC.



## Accessories

► Optional 2 power sockets are reserved on right and left of interior back wall, it is easy for operator to use small device in BSC.

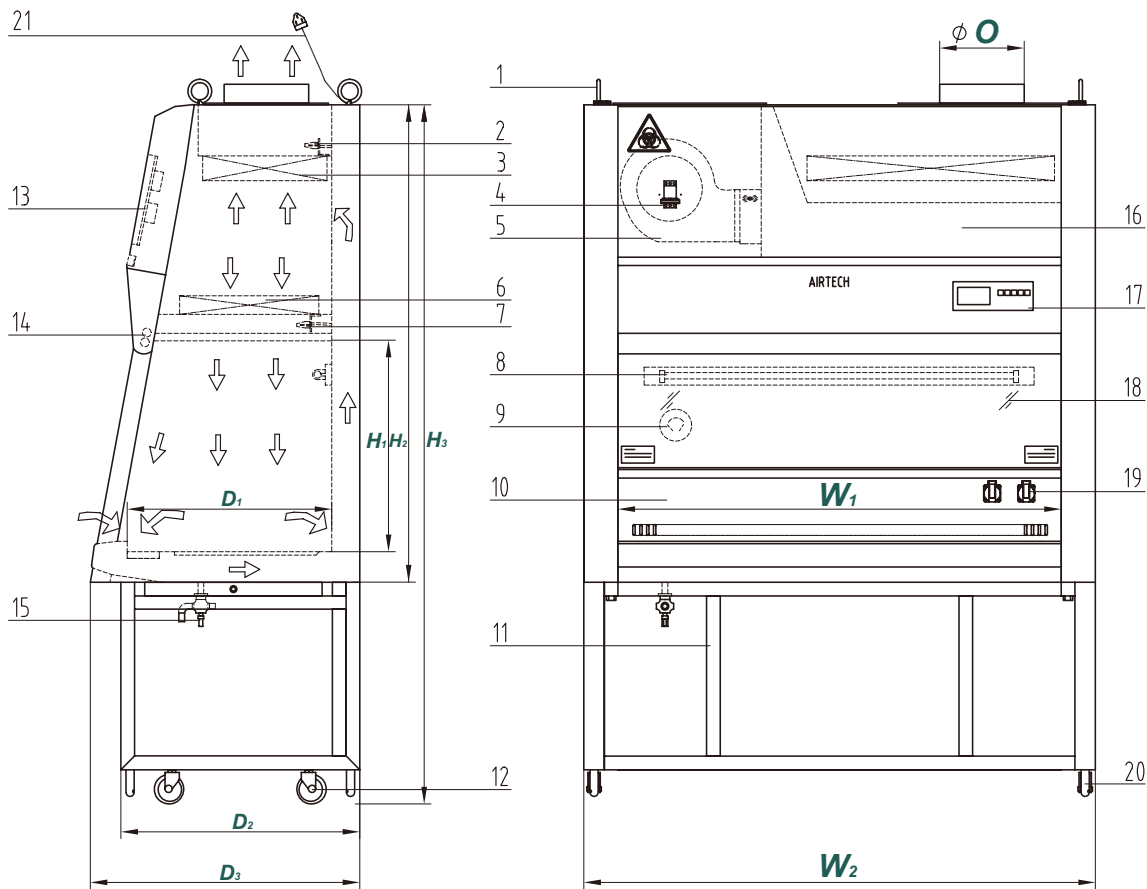
► LED light and UV lamp are standard Installed.

► Remote Dry contact enable user know the biosafety cabinet power on or off in remote distance.

► Blower positive pressure test port (filter upstream test) and Blower negative pressure port are convenient engineer to test the biosafety cabinet condition.



# Class II Type A2 Biological Safety Cabinet Engineering Drawing



- |   |  |  |
|---|--|--|
| 1. Eyebolt                                  | 2. Velocity sensor (Austria made, air exhaust) | 3. HEPA filter, air exhaust                    |
| 4. DC motor fan                             | 5. Main power switch                           | 6. HEPA filter, air supply                     |
| 7. Velocity sensor (Japan made, air supply) | 8. UV lamp                                     | 9. Dwyer differential pressure gauge (US made) |
| 10. Work area                               | 11. Detachable stand                           | 12. Universal casters                          |
| 13. Main power board                        | 14. LED lamp                                   | 15. Drain valve                                |
| 16. Main body                               | 17. Control panel                              | 18. Sliding door                               |
| 19. Sockets                                 | 20. Adjustable feet                            | 21. Power cord                                 |

Model	Dimensions in mm								
	$W_1$	$W_2$	$D_1$	$D_2$	$D_3$	$H_1$	$H_2$	$H_3$	O
<b>BSC-1003IIA2</b>	1270	1380	600	700	790	620	1490	2050	250
<b>BSC-1303IIA2</b>	1270	1380	600	700	790	620	1490	2050	250
<b>BSC-1603IIA2</b>	1570	1800	600	700	790	620	1490	2050	250

# TECHNICAL SPECIFICATIONS

Model		BSC-1003IIA2 (-E/-S/-SE)	BSC-1303IIA2 (-E/-S/-SE)	BSC-1603IIA2 (-E/-S/-SE)
Dimensions	Nominal Size	3 feet	4 feet	6 feet
	Usable Working Area	0.582 m <sup>2</sup>	0.762 m <sup>2</sup>	0.942 m <sup>2</sup>
	Stand Height (mm)	770mm	770mm	770mm
	Internal (W x D x H)	970*600*620 mm	1270*600*620 mm	1570*600*620 mm
	External (W x D x H)	1200*790*2050 mm	1500*790*2050 mm	1800*790*2050 mm
	Carton Packing (W x D x H)	1240*840*2250	1540*840*2250	1840*840*2250
	Plywood Packing (W x D x H)	1300*900*2250	1600*900*2250	1900*900*2250
Airflow	Type	Class II, Type A2	Class II, Type A2	Class II, Type A2
	Exhaust Direction	Top Exhaust	Top Exhaust	Top Exhaust
	Airflow Pattern (downflow / exhaust)	70% / 30%	70% / 30%	70% / 30%
	Average Inflow Velocity	0.55m/s	0.55m/s	0.55m/s
	Average Downflow Velocity	0.35m/s	0.35m/s	0.35m/s
	Inflow Airflow Volume	385 m <sup>3</sup> /h	505 m <sup>3</sup> /h	625 m <sup>3</sup> /h
	Downflow Airflow Volume	720 m <sup>3</sup> /h	940 m <sup>3</sup> /h	1160 m <sup>3</sup> /h
	Exhaust Airflow Volume	385 m <sup>3</sup> /h	505 m <sup>3</sup> /h	625 m <sup>3</sup> /h
	Velocity Meter Accuracy	0.001m/s	0.001m/s	0.001m/s
Construction	Pressure Gauge	Dwyer Brand, USA	Dwyer Brand, USA	Dwyer Brand, USA
	Blower	ECM DC Motor		
	Work Zone	SUS304, Single-piece or 3-piece		
	Main Body	Electro-galvanized steel with white oven-baked powder-coated finish		
	Sash Glass Thickness	6mm		
	Sash Glass Type	Tempered Glass, UV-proof		
	Sash Window Working Opening	200mm	200mm	200mm
	Sash Window Maximum Opening	460mm	460mm	460mm
	Illumination (Lx)	≥1100	≥1100	≥1100
	Noise (dB)	≤60	≤60	≤60
Cleanliness	Cleanliness	HEPA: ISO Class 5		
	Filtration Efficiency	HEPA: ≥99.995%, @0.3 μm		
	Total colony in impaction sampler (Operator Protection)	≤10CFU./Time	≤10CFU./Time	≤10CFU./Time
	Total colony in slit type sampler (Operator Protection)	≤5CFU./Time	≤5CFU./Time	≤5CFU./Time
	Total colony in culture dish (Product Protection)	≤5CFU./Time	≤5CFU./Time	≤5CFU./Time
Controller	Display	LCD Screen	LCD Screen	LCD Screen
	UV Timer	Yes	Yes	Yes
	Main Power Switch	Yes	Yes	Yes
	Key Switch	Yes	Yes	Yes
Electrical Data	Power Consumption (KW.h/h)	0.5	0.6	0.6
	Power (W)	500	650	650
	Electrical Current (A)	3	3.5	3.5
Power Supply	AC220V, 1Φ, 50HZ	Yes	Yes	Yes
	AC220V, 1Φ, 60HZ	Yes	Yes	Yes
Weight	Net Weight(kg)	260	300	350
	Gross Weight, Carton Packing (kg)	292	340	388
	Gross Weight, Plywood Packing (kg)	382	405	458
Alarm	Alarm Type	Sound+Flash	Sound+Flash	Sound+Flash
	Inflow Velocity	Yes	Yes	Yes
	Downflow Velocity	Yes	Yes	Yes
	Sash Height Limit	Yes	Yes	Yes
	Filter Blocked	Yes	Yes	Yes
	Filter Shattered	Yes	Yes	Yes
	Filter Lifetime Remind	Yes	Yes	Yes
Filter	Downflow	HEPA: ≥99.995%, @0.3 μm		
	Exhaust	HEPA: ≥99.995%, @0.3 μm		
	Mateiral	HV Brand, USA		
Accessories	Side Wall	SUS304/Glass		
	Front Sash	Manual/Electric Automatic		
	LED Lamp	24.5W, ≥1100Lx	31W, ≥1100Lx	36W, ≥1100Lx
	UV Lamp	20W*1	30W*1	40W*1
	Receptacle (pieces/Power/Current)	2 pcs/500W/3A	2 pcs/500W/3A	2 pcs/500W/3A
	Detachable Stand	Yes	Yes	Yes
	Adjustable Foot	Yes	Yes	Yes
	Wheels	Yes	Yes	Yes
	Gas Valve	Optional	Optional	Optional
	Vacuum Valve	Optional	Optional	Optional
	Arm Rest	Optional	Optional	Optional
	I.V. Pole	Optional	Optional	Optional



**Antech Group Inc.**

Tel: +86 532 87890321

Email: info@antechscientific.com

Web: www.antechscientific.com